Discussion of “Debt, Deleveraging, and the Liquidity Trap”

by Gauti Eggertsson and Paul Krugman

Discussion by Bob Hall

Federal Reserve Bank of San Francisco
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My adviser, Hyman Minsky
**Krugman Effect**

A force that results in an increase in the marginal rate of substitution must cause low real interest rates, possibly dangerously negative.

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MRS = \frac{1}{1 + \rho} \frac{u'(c_{t+1})}{u'(c_t)} = \frac{1}{1 + r} > 1
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and we have the troublesome \( r < 0 \).

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See Krugman (BPEA, 1998), where lower future output endowment is the source of declining consumption and higher \( \text{MRS} \).

Eggertsson and Woodford (BPEA, 2003) and Christiano, Eichenbaum, and Rebelo (JPE, 2011) get the Krugman effect from a decline in time preference \( \rho \).

This paper and Hall (AER, 2011) rely on the more plausible Migraine Effect.
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Eggertsson Effect

\[ r_n = r + \mathbb{E} \pi \]

and slackness causes a decline in \( \mathbb{E} \pi \) and thus a greater danger of the calamity of \( r_n = 0 \).
Fisher Effect

A decline in the price level increases the real burden of debt service and stresses constrained households.
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It would be erroneous to think that the household suffers a decline in current real income equal to the increase in the real amount of its debt.
**Migraine Effect**

When constrained consumers weather the stress of deleveraging and their consumption starts growing, the consumption of unconstrained consumers will need to start shrinking, thus triggering the Krugman Effect.
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The classical migraine headache hits during the period of relief after a stressful experience.
My assessment

The Krugman Effect is part of bedrock macro and has to be right, but it is important, as this paper points out, that the MRS applies only to consumers who are not at the corner of the Bewley-Aiyagari intertemporal allocation problem.
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Fisher’s debt deflation had essentially no role in the Great Slump.
**Eggertsson Effect**

The effect arises from Calvo incapacity of immediate response by price setters. When output falls, they know they want to cut prices but they have to wait for Calvo to give the OK. The result is a decline in expected inflation.

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The paper refers to the paradox of flexibility but, with respect to the Eggertsson Effect, a better term would be the paradox of semi-flexibility—there’s no problem from fully flexible prices and none from completely sticky prices, but a profound problem from the prices that come out of the standard Calvo model and parametrization.

Inflation has only fallen a small amount in the Great Slump and that occurred early; inflation has stabilized above one percent.

This paper does not include the Eggertsson effect in its model.
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Figure 14. Dynamic simulation of 4-quarter core PCE inflation from 2007Q4 to 2011Q3 computed using the unemployment recession gap model. Unemployment values from 2010Q3 through 2011Q3 are SPF median forecasts. All series are plotted as percentage point deviations from their values at the NBER peak. Dashes are mean predicted values, dots are 90% confidence bands.
Annual Percent Changes in Output and Prices, 2007 Q4 to 2009 Q4

CD: Consumer durables
CN: Consumer nondurables
CS: Consumer services
IS: Business structures
IE: Equipment
IR: Homebuilding
XG: Goods exports
XS: Services exports
MG: Goods imports
MS: Goods services
FD: Federal defense
FN: Federal non-defense
SL: State and local
The Migraine Effect

The evidence is overwhelming that deleveraging was a huge burden on households starting in 2007.

\[ \text{debt service} = D_{t} - D_{t-1} - \Delta D_{t} \]

Consumption of constrained consumers is

\[ \bar{c}_{t} = \bar{y}_{t} - s_{t} \]
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I calculate \textit{debt service} $s_t$ as the sum of interest and repayment of debt from

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The next 3 slides are from Hall (AER, 2011).
**Real Burden of Debt Service**

- Based on actual price level
- Based on counterfactual continuation of earlier inflation rate
- Zero

Billions of 2005 dollars

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010
Indexes of Lending Standards Inferred from the FRB Senior Loan Officer Survey
Share of Google Search Queries for the Term “withdrawal penalty”
Modeling issue: The clash of unemployment theories

All recent ZLB papers treat unemployment as a free variable that takes over equating saving to investment when the bound disables the interest rate from that function.
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But we also have the acclaimed DMP model of unemployment, which gives a different answer.